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ABSTRACT

This issues paper, fifth in a series of eight, is intended to distill formative evaluation questions on topics that are central to the development of the higher and further education information environment in the United Kingdom. The term "portal" is so widely used by so many people with so many different perspectives that definition is difficult. In its simplest form a portal is a filter for Web content, a place form which users can locate the Web resources they commonly need. Other aspects of portals that receive attention are the fusion function of portals, which involve cross searching of multiple resources and presentation of the aggregated results within the portal. Personalization is an aspect of a portal in that they select information on the basis of the individual user's needs. Portals for higher education will need to meet many requirements, and they will need to address a significant proportion of the resources that are available within the fields. Many of the issues surrounding portal development have little to do with technology, and more to do with sustainability and determining user needs. (SLD)

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Portals in Higher and Further Education

EDNER Project

Issues Paper 5

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Portals in Higher and Further Education

EDNER
(Formative Evaluation of the Distributed National Electronic Resource)
Project
Issues Paper 5

The term "portal" is so widely used by so many people with so many different perspectives, that an essential first step is to clarify definitions. The JISC 5/99 Programme Call documentation, and more particularly the 'Town Meeting' held in London after the Call was announced, suggested that:

- a portal accepts requests from users and itself interrogates information services it believes may hold appropriate resources. It sends queries to those services and accepts result sets. It then processes those result sets (for example, by removing duplicates) and presents them to the user. In essence the user never leaves the portal. (Joint Information Systems Committee, 1999)

This definition focuses on the idea of **fusion** as a key feature of a national information environment (IE). The definition thus embodies two of the key features of an IE portal:

- cross-searching of multiple resources;
- presentation of the aggregated results within the portal.

However, not everyone would agree that these are the key, or indeed even necessary, features of portals. A long list of possible features has been developed by members of the JISC Subject Portals Project (SPP), based on analyses of existing services on the Web, and ranges from a news ticker to web page translation services (Mathematics Portals Project (2002)). The JISC definitions have also developed over time. One draft considered by the Subject Portals Project suggested:

- a portal is an online service that provides a personalised, single point of access to resources that support the end-user in one or more tasks (resource discovery, learning, research etc). The resources made available via a portal are typically brought together from more than one source. (Stuckes, 2002)

Here the emphasis is on the personalization aspect of portals - their ability to present information which is selected on the basis of the individual user's profile in a way which suits that individual. However, yet another possible definition is offered by the Subject Portal Project's web site:

- In it's simplest form a portal is a filter for web content - a place from which users can locate all the Web resources that they commonly need. Good portals are very successful at building online

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communities by bringing like-minded people together in one place. As these communities are created, portal owners strive to offer a broader range of additional services in an attempt to hold on to their audiences for as long as possible. (RDN Subject Portals Project, 2002)

Part of the problem is that :

- we are still very unclear as to the ways in which people will actually make use of portals. For example, will they use a variety of different portals depending on the task in hand? (So, they use trainline.com for rail tickets; lastminute.com for holidays; and seychellesmoney.com for banking, without expecting any of these sites to take the place of another.) Or will they be attracted by a site that **can** do all these things, and do them well? (So, they follow up the rail ticket request with a click on the 'hotel offers' button and integrate their purchasing with their account with 'railtrack-personal-banking'.) A lot of effort is being made by commercial sites to make them 'sticky' i.e. to keep customers in the site, and to persuade them to keep coming back.
- we don't know whether personalization will prove attractive to users. There is some evidence that where it is offered it is taken up by only a small minority of users (e.g. Ketchell, 2000). Is it worth the effort? Or is it better to go for 'groupisation', with just a few different views or 'landscapes' to meet the needs of groups like undergraduates, postgraduates, researchers or specific subject interest groups?
- we don't know what relationship there will be between institutional portals and national (or other) portals. In some ways institutions are in the strongest position since they can tailor their portal content to the known interests of their users. However, it is clearly uneconomic for every institution to try to develop the definitive subject portal in every discipline. How to blend the two approaches may become the key issue, and recent moves to develop national 'portlets' as plug-ins are a sign of this happening at a practical level.
- we don't know the relationship between information-based portals and learning-based portals (which might, or might not, be the same as VLEs).

Whichever scenario is followed, it seems clear that there will be a need in the future to perform sophisticated cross-searching of very different datasets. There may thus be a hierarchy of complexity to consider, with systems:

- accepting queries from users and searching their own unified database to find and then display answers. This might be seen as the physical union catalogue model.
- accepting queries from users and searching a series of similar database to find and then display answers. In effect this is the OAI model, where metadata is harvested from disparate databases which conform to the agreed standard with the result sets being merged in order to provide services from them. Specific services

may also be queried (e.g. to check for updates) using protocols like Z39.50.

- accepting queries from users and searching a series of dissimilar databases to find and then present answers. This, obviously, is the most complex. Much effort has been expended to enable cross-searching by using agreed protocols like Z39.50 and simple http, but many questions remain about the development of robust services in the real world of highly heterogeneous services.

It is important for developers to be clear as to the features that will make their portal attractive. Two key questions are:

- is adhering to the 5/99 portal definition likely to result in services which become the 'portal of choice' for higher/further education users? Will cross-searching of heterogeneous dataservices really become the 'killer application' that successfully attracts and keeps users?
- or should the 5/99 definition be expanded to encompass a range of added value services?

In higher and further education, institutions are very important players - not least because they hold the purse strings! They are themselves developing portals, so other developers need to ask:

- how will my portal 'fit' with institutional systems? Will it be a back-end service, with a machine-to-machine interface that an institution can plug in? Or will it try to compete with institutional offerings?
- if the target audience is students, how can I achieve integration with VLEs and MLEs? These will increasingly be the locations where students will expect to find resources.
- if the target audience is tutors, how will information and learning objects be integrated in the portal? How will it handle questions such as level and permissions?
- if the target audience is researchers, how can I compete with in-depth 'niche' resources (the likes of *Chemical Abstracts* perhaps)?
- if the target is all three (or any two of three!), can I satisfy them all with the same product - or do I need to plan different versions or different products? To what extent can the presentation be automated to 'sense' what is required, for example by adjusting help to the level of ability of the user?

Portals need to be able to address a significant proportion of the resources which are available within their field, which in turn means the ability to utilise the relevant standard protocols. Developers will already have considered many of the interoperability issues, and these are described in the IE technical architecture. They might also want to think about:

- semantic interoperability - do the terms used by different data providers always mean the same thing?

- control - who decides what content should be offered? Are the selection criteria, including quality criteria, explicit? Are the users able to influence these decisions?
- accessibility - can everyone, including those with disabilities, access the portal? (Issues Paper 6 addresses this topic specifically.)

Scalability - the ability to work satisfactorily across the whole of higher and further education - will also be important. What steps have been taken to test scalability, in terms of:

- the resources the portal wishes to present? e.g. how many target services can it handle, technically and organisationally?
- numbers of concurrent users? (Bear in mind the 1901Census debacle!)
- the learning required by members of different 'communities' to become a competent user of the portal?

Finally, what about sustainability? What steps have been taken to put in place:

- stakeholder commitment to the long-term future of the portal
- including a sustainable software platform (e.g. maintainable when developers have gone on to new jobs)
- and sustainable content maintenance, encompassing quality assurance of existing as well as new content (which means more than just checking that links remain live)
- managed within a short, medium and long term business model?

Many of the issues surrounding portal development have little to do with technology. Portals are an important weapon in the fight to maintain control over ever-burgeoning information resources, but they need to be planned with care and with both current users and long-term service sustainability in mind.

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EDNER Key Issues papers are intended to distil formative evaluation questions on topics which are central to the development of the UK's higher and further education Information Environment. They are presented as short check-lists of key questions and are addressed to developers and practitioners. Feedback to the EDNER team is welcomed.

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EDNER is being undertaken by CERLIM at the Manchester Metropolitan University with CSALT at Lancaster University

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